

CLAIM SET AS AMENDED

1. (currently amended) A method for controlling an emission power of a transceiver that is in communication with another transceiver via a communication system, said method comprising:

measuring an amplitude or power of a signal received by said transceiver;

evaluating a fast fading duration of the received signal based on the amplitude or power measurement;

setting ~~the~~ a power control command at the inverse of the measured amplitude if the fast fading duration is higher than a time duration between the amplitude or power measurement and ~~the~~ an emission power setting and setting the power control command at the inverse of the average of the measured amplitude if the fast fading duration is equal to or lower than the time duration; and

controlling the emission power of said transceiver according to said power control command.

2. (previously presented) The method according to claim 1, further comprising the steps of:

comparing the evaluated fast fading duration with the time duration between the amplitude or the power measurement and the

emission power setting; and

determining said power control command according to the result of said comparison.

3. (canceled)

4. (previously presented) The method according to claim 1, wherein said fading duration is evaluated by the following equation:

$$t_f = \begin{cases} (a) & \frac{\lambda}{\sqrt{2\pi L\nu}} [e^{(\bar{L})} - 1] & \text{if } \bar{L} < 1 \\ (b) & \frac{\lambda}{\sqrt{2\pi L\nu}} & \text{if } \bar{L} < 1 \end{cases}$$

where  $\bar{L}$  is the received amplitude  $L_m$  at a measurement time normalized by a short-term average amplitude  $L_{av}$  ( $\bar{L} = L_m L_{av}$ ),  $\nu$  and  $\lambda$  are respectively the speed of the said transceiver relative to the other transceiver and the wavelength of the carrier used by the communication system.

5. (previously presented) The method according to claim 1, wherein said power control command signal is determined by the following equation:

$$PC(t_d) = \begin{cases} 1/L_m & \left\{ \begin{array}{l} \text{if } \bar{L} < 1 \text{ and } t_d < \frac{\lambda}{\sqrt{2\pi\bar{L}v}} [e^{(\bar{L}^2)} - 1] \\ \text{if } \bar{L} \geq 1 \text{ and } t_d < \frac{\lambda}{\sqrt{2\pi\bar{L}v}} \end{array} \right. \\ 1/L_{av} & \left\{ \begin{array}{l} \text{if } \bar{L} < 1 \text{ and } t_d \geq \frac{\lambda}{\sqrt{2\pi\bar{L}v}} [e^{(\bar{L}^2)} - 1] \\ \text{if } \bar{L} \geq 1 \text{ and } t_d \geq \frac{\lambda}{\sqrt{2\pi\bar{L}v}} \end{array} \right. \end{cases}$$

where  $PC(t_d)$  is the power control command signal which will be used at the present time (assumed to zero) +  $t_d$ ,  $L_m$  is the measured amplitude,  $L_{av}$  is the short-term average of the measured amplitude,  $t_d$  is the time delay between the moment of the measurement of the measured amplitude  $L_m$  and the use of the  $PC$  command and  $\bar{L} = \frac{L_m}{L_{av}}$  is the normalized measured amplitude.

6. (previously presented) The method according to claim 1, wherein said power control command signal is determined by the following equation:

$$PC(t_d) = \begin{cases} 1/L_m & \text{if } t_d < \frac{\lambda * \min\left(\bar{L}, \frac{1}{L}\right)}{\sqrt{2\pi v}} \\ 1/L_{av} & \text{if } t_d \geq \frac{\lambda * \min\left(\bar{L}, \frac{1}{L}\right)}{\sqrt{2\pi v}} \end{cases}$$

where  $PC(t_d)$  is the power control command which will be used at the present time (assumed to zero) +  $t_d$ ,  $L_m$  is the measured

amplitude,  $L_{av}$  is the short-term average of the measured amplitude,  $t_d$  is the time delay between the moment of the measurement of the measured amplitude  $L_m$  and the use of the PC command and  $\bar{L} = \frac{L_m}{L_{av}}$  is the normalized measured amplitude.

7. (currently amended) An apparatus comprising:

an evaluating unit for evaluating a power command based on a signal received by a transceiver; and

a transmission unit for transmitting signals with a power corresponding to the power command, wherein the evaluating unit includes an estimation unit for estimating a fast fading duration of the signal received by the transceiver and a control unit for determining ~~the~~ a power control command based on the fast fading duration estimation made by the estimation unit,

wherein the control unit sets the power control command at the inverse of the measured amplitude if the fading duration is higher than the time duration between the amplitude or power measurement and the emission power setting and sets the power control command at the inverse of the average of the measured amplitude if it is equal to or lower than said time duration.

8. (previously presented) The apparatus according to claim 7,

wherein the control unit compares the evaluated fast fading duration with a time duration between the amplitude or the power measurement and an emission power setting, and determines said power control command according to a result of said comparison.

9. (currently amended) The apparatus according to claim 8, ~~wherein~~ further comprising:

a measurement unit for measuring the amplitude or the power of the received signal and an averaging unit and for determining a the short-term average of the measured amplitude or power[[,]]\_.

~~wherein the control unit sets the power control command at the inverse of the measured amplitude if the fading duration is higher than the time duration between the amplitude or power measurement and the emission power setting and at the inverse of the average of the measured amplitude if it is equal to or lower than said time duration.~~

$$PC(t_d) = \begin{cases} 1/L_m & \text{if } t_f > t_d \\ 1/L_{av} & \text{if } t_f \leq t_d \end{cases}$$

10. (currently amended) The apparatus according to claim 7, wherein the estimation unit evaluates the fast fading duration by the following equation:

$$t_f = \begin{cases} (a) \frac{\lambda}{\sqrt{2\pi\bar{L}v}} \left[ e^{(\bar{L}^2)} - 1 \right] & \text{if } \bar{L} < 1 \\ (b) \frac{\lambda}{\sqrt{2\pi\bar{L}v}} \left[ e^{(\bar{L}^2)} - 1 \right] & \text{if } \bar{L} \geq 1 \end{cases}$$

where  $\bar{L}$  is the received amplitude  $L_m$  at a measurement time normalized by the short-term average amplitude  $L_{av}$  ( $\bar{L} = L_m/L_{av}$ ),  $v$  and  $\lambda$  are respectively the speed of the transceiver relative to the other transceiver and the wavelength of the carrier used by the communication system.

11. (currently amended) The apparatus according to claim 7, wherein said power control command signal delivered by the control unit is ~~determine~~ determined by the following equation:

$$PC(t_d) = \begin{cases} 1/L_m \left\{ \begin{array}{l} \text{if } \bar{L} < 1 \text{ and } t_d < \frac{\lambda}{\sqrt{2\pi\bar{L}v}} \left[ e^{(\bar{L}^2)} - 1 \right] \\ \text{if } \bar{L} \geq 1 \text{ and } t_d < \frac{\lambda}{\sqrt{2\pi\bar{L}v}} \end{array} \right. \\ 1/L_{av} \left\{ \begin{array}{l} \text{if } \bar{L} < 1 \text{ and } t_d \geq \frac{\lambda}{\sqrt{2\pi\bar{L}v}} \left[ e^{(\bar{L}^2)} - 1 \right] \\ \text{if } \bar{L} \geq 1 \text{ and } t_d \geq \frac{\lambda}{\sqrt{2\pi\bar{L}v}} \end{array} \right. \end{cases}$$

where  $PC(t_d)$  is the power control command signal which will be used at the present time (assumed to zero) +  $t_d$ ,  $L_m$  is the measured amplitude,  $L_{av}$  is the short-term average of the measured amplitude,  $t_d$  is the time delay between the moment of the measurement of the

measured amplitude  $L_m$ , and the use of the PC command and  $\bar{L} = \frac{L_m}{L_{av}}$  is the normalized measured amplitude.

12. (currently amended) The apparatus according to claim 7, wherein said power control command signal delivered by the control unit (24) is ~~determine~~ determined by the following equation:

$$PC(t_d) = \begin{cases} 1/L_m & \text{if } t_d < \frac{\lambda * \min\left(\bar{L}, \frac{1}{L}\right)}{\sqrt{2\pi\nu}} \\ 1/L_{av} & \text{if } t_d \geq \frac{\lambda * \min\left(\bar{L}, \frac{1}{L}\right)}{\sqrt{2\pi\nu}} \end{cases}$$

where  $PC(t_d)$  is the power control command which will be used at the present time (assumed to zero) +  $t_d$ ,  $L_m$  is the measured amplitude,  $L_{av}$  is the short-term average of the measured amplitude,  $t_d$  is the time delay between the moment of the measurement of the measured amplitude  $L_m$  and the use of the PC command and  $\bar{L} = \frac{L_m}{L_{av}}$  is the normalized measured amplitude.